

TEACHER PROFESSIONAL DEVELOPMENT IN THE AMAZON REGION: STRATEGIES TO CREATE SUCCESSFUL LEARNING COMMUNITIES

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ABSTRACT

The Faculty of Education, University of Brasilia, implemented an online undergraduate degree program for classroom teachers (student-teacher) who have not yet completed their studies. There are 1800 classroom teachers in the Brazilian state of Acre, bordering Peru and Bolivia, who have completed only high school. However, a new directive from the Ministry of Education makes it mandatory to have a degree in education to be a classroom teacher. A mixed program combining online work with face-to-face meetings was implemented to address this need. The first group with a total of 860 teachers began the program in 2007 and graduated in April 2010. The dropout rate was very low, at 5.5%. A collaborative learning strategy was used to create learning communities and to bridge the various schools, regions and ethnic groups allowing participants to feel integrated despite distance, cultural diversity, language, and religion. To conduct this research we collected data from observations in teacher meetings, online discussions and participants' Reflective Diary, a diary written by each teacher throughout the program. Here we discuss the challenges found in implementation of the project and the strategies used to successfully create learning communities.

KEYWORDS:

Learning communities, online learning, undergraduate degree, collaboration, teacher professional development.

I. INTRODUCTION

A teacher is not always the one who teaches but is the one who is open to learn on the spot, anytime, anywhere. [1]

The teachers we study are those enrolled in an online undergraduate degree in education called PEDEaD (*Pedagogia em Educação a Distância*), i.e. they receive the diploma of pedagogues and are in this way qualified to teach. The PEDEaD program involves three types of docents: university professors who elaborate the textbooks, the curriculum material, and teach the 54 mediators. These university professors are from the Faculty of Education – University of Brasilia and the University of Acre. The professors created and teach a post graduate certificate in distance education (*Especialização em Educação a*

Distancia, ESPEaD) for the 54 mediators (*Professores Mediadores*) who then teach the 1800 student-teachers enrolled in the online undergraduate program in Education, PEDEaD.

II. THE ONLINE UNDERGRADUATE PROGRAM IN EDUCATION PEDEAD

In 2006 the Secretary of Education, State of Acre, contacted the Faculty of Education, University of Brasília, to request their help to comply with the new act of the federal Ministry of Education requiring that all teachers should complete their undergraduate degree in Education. A positive response from the Faculty of Education led to the creation of the online undergraduate program PEDEaD and the online post-graduate certificate ESPEaD which were launched in the first semester of 2007. At that time there were 1800 student-teachers in the State of Acre who have not completed an undergraduate degree. Of these, a first group with a total of 860 teachers graduated in April, 2010. The second group of 940 teachers completed the program in March 2011.

The PEDEaD program was offered in the mixed mode, combining a weekly face-to-face meeting with online work in the Moodle online platform. Web conferences were also used. The program is run by a General Coordination and an Intermediate Coordination. The General Coordination has an Office at the Faculty of Education, University of Brasília, and consists of the Director and Vice Director of the Faculty of Education, an Assistant Professor in charge of the technology and the online pedagogy, and four staff members. The Intermediate Coordination is based in the capital of the State of Acre, Rio Branco, and consists of four members supported by the staff of the Secretary of Education. These two units work close together to manage the entire PEDEaD and ESPEaD Programs.

The two programs, the ESPEaD and the PEDEaD, are being offered in a concurrent format. The programs led to the formation of a vast network of teacher professional development in the State of Acre that involves two universities (University of Brasília and University of Acre) and schools in 20 of the 22 municipalities of the state.

The foundation and structure of the PEDEaD program has its origin in a similar program developed by the Faculty of Education–UnB, in partnership with the Secretary of Education of the Federal District in 2001 called Pedagogy for Acting Classroom Teachers in the Elementary Grades (*Pedagogia para professor em exercício no início de escolarização* – PIE). The PIE program was a successful experience and led to the graduation of two thousand school teachers and sixty instructors of a post graduate certificate in teacher education. The PEDEaD was then modeled in the PIE program. In the offering of the PEDEaD the same curriculum structure developed in the PIE Program was used, consisting of six integrating themes: 1. The Brazilian Educational Reality; 2. Culture and Work in Brazil; 3. Education and the Social Context; 4. The School as a Social Institution. 5. Curriculum and Cultural Diversity; 6. Teacher and Student in a relation of partnership. These six themes were organized into six modules, each containing either five or six textbooks. Each textbook was then subdivided into three sections. With small revisions and alterations, almost all textbooks of the PIE Program were used in the PEDEaD program. Alterations and additions were done considering the peculiarities of the State of Acre, i.e., a textbook on Native Education was introduced and other revisions were also done [2].

As the original PIE program offered in 2001 was one for professional development of student-teachers, the challenge faced by the professors at the Faculty of Education was to develop an evaluation process that should be an integral part of teachers learning process, stemming from the continuous reflection that each make about his/her practice in the classroom [3]. In this case the evaluation could be the starting point of a new organization of the pedagogical work, more oriented towards teacher reflection and with a better

foundation in the relation theory and practice. One of the biggest challenges was the decision to eliminate the final exam and to adopt an evaluation model centered in the elaboration of activities of specific content and in the construction of a portfolio (called the Reflective Diary) where teachers could express, in a procedural format, the development of their learning process throughout the course. This decision required a long and strenuous debate among participants involved in the program supported in their discussion by educational evaluation consultants [4].

Professors of the PEDEaD Program decided to use an evaluation process similar to the one offered in the Federal District, the PIE, but refining and revising the model previously used. The experience with the use of portfolios in the PIE Program made it clear that it was necessary to do a better analysis of what should be the content of the Reflective Diary. Besides incorporating pictures, testimonies, narratives, and information, it was also necessary to build a synthesis that could express a deeper reflection of the student-teacher about his/her own professional development process. Based on this assumption it was then decided that the diary should be written by the student-teacher as a component of the evaluation process and the elaboration of a final version would incorporate and summarize all reflections made and recorded by teacher along the six semesters of the entire program.

In contrast to the PIE program that did not use the computer as a complementary tool, in the PEDEaD program teachers use the computer to access an online platform as the main site to support the learning process. Online tasks represent 50% of the final grade. In the previous case of the PIDE Program, all 2,000 teachers involved were located in the Federal District, facilitating weekly face-to-face meetings. In the case of the PEDEaD program teachers were dispersed in the entire state of Acre, approximately 60,000 square miles.



Figure 1. A PEDEaD teacher in the classroom

This educational process mediated by communication technology can facilitate the emergence of multiple dimensions and aspects that have to do with human sociability in today's world. As per the multiple practices that are used in education to transmit and build knowledge and to access information, it is above all necessary to work for the development of a human being who is capable to establish knowledge sharing relations and construction, in both online and face-to-face group meetings.

The design of the program was based on the need to create a network for teacher professional development with the support of professors and instructors from different locations and in this way reach the teacher in the classroom. This was made possible because of the delivery mode chosen, a combination of online and face-to-face meetings to support the work of professional development for student-teachers.

To enroll and to remain as a member of the PEDaD program the student-teacher has to be active in the school, teaching grade 1-5 students. This teaching is incorporated as a regular workload equal to the classroom internship in schools required for regular students in the face-to-face undergraduate degree of education in the Faculty of Education, University of Brasilia. Besides, s/he needs to have Internet access to logon to the online platform, performs weekly tasks for each of the sections of the textbooks, and interact with the mediators and colleagues (student-teachers).

A. The pedagogical model

The pedagogical model used in the program took into consideration two main issues related to the program: the specifics of the State of Acre such as schools involved in the program were spread throughout the entire state and were far and of difficult access, particularly in the rainy season. Many of the towns and schools did not have access to the Internet in the beginning of the program.

The other issue was the need to strength and expand the model used in the project, combining face-to-face and online work in a collaborative format.. In the weekly face-to-face meetings teachers collaborated with each other to complete course tasks. But the online component of the course was still more oriented towards completion of individual tasks. Moodle functionality called “Task”, that allows for communication only teacher-student and student-teacher , was used by many teachers. Beginning 2008 the Coordination Committee of the program decided to make a change and discourage the use of the “Task” function in the online platform while promoting the sharing of all responses, comments, and papers among peers..

The PEDEaD Program applied a blended learning model that combines face-to-face meetings and online access and collaboration. A series of textbooks containing all content for the program and produced by faculty members at the Faculty of Education of the University of Brasilia and from the Faculty of Education - University of Acre were produced. In each textbook chapter there are suggestions for classroom activities. In the face-to-face meetings teachers discussed among themselves and with the mediator the readings of the week and how to implement the activities discussed in the textbook. In the online discussion they placed their comments about the activities being implemented in the classroom, and discuss with their peers. Finally, they also write their observations and thoughts about their routine classroom teaching experiences in their Reflective Diary.

B. The Reflective Diary

Teachers are required to complete Reflective Diary each semester and defend the final version of the diary at the end of the program. The final version contains the reflections each teacher develops along his/her own path to professional development.

A bachelor’s degree in Education requires completion of 3200 credit hours distributed as follows: 1920 hours for the modules activities (reading the textbooks and developing the activities online and face-to-face), and 1280 hours of classroom internship in schools. Evaluation of the online and face-to-face activities is structured in the following format: individual and collaborative activities online represent 50% of the grade. The face-to-face activities in the regular weekly meeting represents 30% of the grade and 20% is for the elaboration of the diary. Each module is 320 hours. There are six modules for a total of 1.920 hours. The complete program is completed in 3.200 hours.

In order to enroll in the PEDEaD program participants have to be teaching elementary grades. To support teachers a professional development network was created that includes undergraduate education through the student-teacher in the classroom and graduate education through the instructors and the professors of the Faculty of Education. The result of this integration is that a significant part of the activities done in the program have a direct impact in each of the three levels of education: elementary, undergraduate, and graduate. And it is important to mention that the network reaches elementary school children of almost all cities of the State of Acre, covering 20 of the 22 cities in the state. The work teachers do in the classroom is followed by instructor and evaluated, not only by instructors but also by the school team where s/he teaches. This network helps teachers to improve their practices in the classroom and foster their commitment to their students, as mentioned by one of the teachers:

“Now I have an even bigger commitment with education, not to let this knowledge I have built through this program be forgiven. My role then is to mediate the learning of my students and to facilitate the emergence of reflexive and critical thinking in the classroom, leading them to comprehend their social role, as I comprehend mine, and to let them know about their rights and obligations as citizens. ” Student-teacher 9

C. Cost estimate

It is estimated that the cost to graduate a student was US\$186,000.00; as it was a three year program there was a yearly cost of US\$62,000.00 per student. This amount covers all expenses in the three year program and it should also be mentioned that there are many items implemented in the program that will benefit other programs and teachers as well, such as the infrastructure, the computer labs, and access to the Internet.

III. THE RELATION BETWEEN THE UNDERGRADUATE AND THE GRADUATE PROGRAMS (PEDEAD AND ESPEAD)

The mediator/instructor has two main tasks in the PEDEaD program: s/he teaches her/his group of PEDEaD teachers both in face-to-face meetings as well as in the online platform, while he is also enrolled in the post graduate program of the Faculty of Education. In the beginning of each semester instructors meet with their professors for one week of face-to-face meetings. Professors from the University of Brasilia fly to Rio Branco, the capital of the State of Acre where the meeting takes place. In the meetings professors present the content of their textbooks and propose and discuss with the instructors pedagogical processes to be developed along the semester. A significant part of these meetings were initially dedicated to training on how to use the online platform.

IV. CHALLENGES TO IMPLEMENTING THE PROGRAM

The implementation of the PEDEaD program faced many challenges that impacted the program to a significant degree, i.e., distant location of communities associated with difficulties of access, as many schools can be regularly accessed only in the dry season, while access in the rainy season is by boat or plane only; technical problems to access the Internet; and teacher training needed to use the online platform. We also experienced difficulties with the fact that many student-teachers found it difficult to participate in a program that required regular writing and the constant posting of messages and comments. For many of them writing was still a difficult skill to be mastered. As they knew that messages were read by peers they became very self-conscious about revealing their writing as it was. In addition to learning how to write better they also had to learn how to use the Internet and a Learning Management System (LMS), the Moodle platform.

The Coordination Committee decided to offer a “writing workshop” for those in need to improving their writing skills. And for our satisfaction, many of those who enrolled in the writing workshop, began to write much more skillfully and regularly in the online platform. Next, the challenges for the successful implementation of the program are discussed.

The State of Acre is located in the core of the Amazon region, bordering Peru and Bolivia to the east. To the west it borders the Brazilian state of Amazon. All rivers in the state flow to the Amazon basin and the region is very hot, humid, and rainy. The state is covered by the Amazon forest and many of the native

people who live close to towns are also enrolled in the regular school system. There are few roads and many cannot be accessed in the rainy season. The presence of the forest and the seasonal rain seems to be omnipotent and local people have to adjust to this reality. The importance of the forest in the lives of the local people is such that while the word citizenship is used to express the rights and obligations of a citizen to his country or region, a new word “florestania”, that can be translated as “forestship”, has been created in the state of Acre to express the rights and obligations of their population to the forest.

All these environmental conditions difficult transportation and communication: often teachers and children have to change from a motor vehicle to a boat to get to school, and this makes the trip much longer and difficult. The same happens with the communication lines, the telephone and the Internet, that can be interrupted during the rainy season.



Figure 2. Boats, ships and ferries are most common types of transportation

The technical problems that happened at the beginning of the PEDEaD program seemed to be insurmountable. Small towns did not have access to the Internet and when there was access, it was irregular, making it impossible to do the regular weekly activities in the online platform. The only reliable service was the one owned by the Brazilian Army as there are satellites over the sky of the region monitoring the borders and the forest. The PEDEaD team had several meetings with Army officers who helped us to broadcast several videoconferences to distant locations. In 2008, the second year of the project, many of the towns installed Internet services. But it was costly and still not totally reliable.

Although the Internet became available to all cities and towns involved in the project in 2008, access was mainly through school labs and government telecenters. Most schools and telecenters are closed in the evening and for teachers this was the best moment to work in their PEDEaD activities. It was by the end of 2008 that many teachers began to purchase their own computers and to have access from home. Today we estimate that 90% of them have computers at home with Internet access.

Besides difficulties to access a computer and the Internet, many teachers also had difficulties in learning how to use the computer. Many mentioned the fear they had to turn on the computer and do something wrong that would damage the machine. The PEDEaD program organized several training sessions in the different towns. While these training sessions were helpful, it was, however, in their homes that most teachers were trained. In fact, teachers' sons and daughters were in many cases those who first learned how to manage the home computer and the Internet and then taught their parents. An additional help were colleagues who made themselves available to help others.

One of the factors that facilitated the success of the program was that all teacher-students involved were already teaching in the classroom and knew their local peers. Almost all of them also needed to complete the PEDEaD program to be further qualified in order to be able to stay in their work as teachers and therefore to keep their jobs. If they did not complete their program they could stay in the school, but only with administrative tasks and could not teach in the classroom. These shared constraints helped create a strong bond of solidarity and support among participants that favorably impacted the implementation of the PEDEaD Program. It could be noticed through student-teachers postings and in the face-to-face meetings that they were determined to complete the program and obtain their undergraduate degree in education.

V. METHDOLOGY

A qualitative methodology to collect and analyze data was developed that combined access to memorandums, messages, letters, and other documents; and access to the online course messages and the student-teachers' Reflective Diary. Access to documents was combined with systematic observations done by the researchers when visiting the participant schools and speaking to the PEDEaD teachers. We visited all the schools in the project, met with teachers, and wrote down our observations and thoughts.

Documents, memos, messages, were all accessed and read to obtain data about the program objectives, accomplishments, difficulties, and results. All discussion forums were also accessed. In these online transcripts we conducted content analysis to identify the key issues. After the reading of posted messages, we elaborated categories, such as: problem, difficult, hope, help, community, success, support, conclude program. Then we searched for these categories in the files containing all transcript messages and our observations. We selected some quotations from student-teachers to illustrate the significance of the program for them and the main issues they experienced

VI. CREATING ONLINE AND FACE-TO-FACE LEARNING COMMUNITIES

Collaboration and collaborative learning can support learning and enhance education [5]. Several projects have used this strategy and have been successful [6]. After a discussion with teachers and mediators, we decided to introduce two formats to support peer collaboration: a continuous online discussion through the posting of comments supported by the mediator, and face-to-face weekly meetings, in the community where the teachers reside to help them in course tasks, hands on with technology and others issues.

Many of the weekly tasks of student-teachers are done in the platform and available to mediators and colleagues alike. This model of open access to each other assignments was initiated in 2008 (while the program began in 2007). In this way the mediators have access to the assignments to grade them, but other participants, student-teachers, can also access and read the activities of their peers. This sharing began in a more active way when weekly online assignments - that were delivered through the Moodle functionality called Task - began to be posted in the forums. The Task functionality allows only the

instructor to access and to read the activity; it was then modified so that all weekly assignments began to be placed in the Moodle Forum, allowing everyone to read each others' tasks.

This change represented the beginning of a more active online sharing of information and knowledge among student-teachers. This was the first step towards the formation of online learning communities to support each other in course tasks. Another important step was the sharing of the Reflective Diary, which also began to be posted for peers and mediators' reading.

The face-to-face learning community is created locally in the town where teachers live, or the community, in case of rural area schools. In these learning communities, 5, 10, 15 or more teachers, meet weekly, generally in the evening, for a period of three hours, from 19:00 to 22:00. In these meetings they discuss the difficulties they are having and other issues related to the activities and the learning process in the PEDEaD program. They talk to the mediator about weekly activities of the program and obtain support to carry them out. In the face-to-face meeting student-teachers also collaborate in activities such as home visits to support those who are behind, or who may need help with the computer and the Internet. In this way collaboration among peers help each other with technical and pedagogical issues in the program.[7].

While the online activities are the locus of the PEDEaD program, the face-to-face meetings are also an important component in teachers learning process. In the weekly face-to-face meetings teachers can establish a more relaxed interaction with peers and deal with some of the difficulties they face in the program. Some teachers were discouraged because of the pressure and amount of work but were supported by their peers to persist and to overcome the problems they were experiencing. For many the help they found in the face-to-face meetings was fundamental to issues such as how to use the computer and to navigate online or how to deal with many of the demands they were facing.

Many teachers commented about the importance of face-to-face community and collaboration they experienced in the program. One of them explains how her peers were important in moments of hardship and distress:

"First I thank God, then my colleagues, because without them I would have quit. When I was not able to do some of the online activities there was always someone who would come to me and say: and then my colleague? Why haven't you done the activity yet? Let's go to my place and there we can work and I will give you a hand." Student-teacher 7

There were those who were ready to quit, but with support they were able to stay and to overcome the problems:

"In the beginning my difficulties were enormous. I almost quit when I found out I had to use a computer. I did not know even how to turn on the machine, much less how to use it, how to work with the mouse. I was afraid to use the online platform and do something wrong. But my instructor was very patient with me and taught me everything, step-by-step." Student-teacher 6

If the PEDEaD program were to be offered entirely online, without face-to-face meetings, many teachers would not have stayed and likely would have quit. One of the reasons for the permanence of many teachers in the program – despite all adversities they found – was the help and support received in the face-to-face meetings. When teachers go to the weekly meeting they already have worked in the online activities and can bring to the meetings the difficulties, problems, and solutions they encountered. The

mediator then helps the teacher in need and discusses the problems and doubts s/he brings to the meetings. Combined with online collaboration with teachers in other locations, there was a seamless integration of both modes, face-to-face and online. One teacher mentioned how the online and face-to-face help she had was important in achieving her objectives:

“I have learned that I am my own guide in this process and for this reason I have to dedicate myself entirely to the program, learning how to have an investigative mind and to sharpen my curiosity, fighting for not ever losing the desire to learn always, overcoming roadblocks and following the path to my objectives. I always found support from my instructors and colleagues, both online as well as in my meetings with them.” Student-teacher 8

On the other hand, the online community is much broader and includes participants such as their peers in other cities in the state of Acre, but also the ones from Brasilia, and elsewhere. They also begin to access several educational services of the University of Brasilia, such as the online library and resources in the Web1. The online community gives them a sense that in all the state of Acre student-teachers are engaged in the same challenge, to make a better education.

Online programs seem to be more demanding than face-to-face ones as participation is through the written word, with the messages and tasks posted in the platform, as opposed to the face-to-face learning when the spoken word is the main communication mode. Therefore, reading mediators and peer comments and messages, and writing and posting one's own contribution to the online platform becomes a routine task in the relation of the mediator with student-teachers.

The importance of the PEDEaD program in teachers' practice can be noticed in this quote from another student-teacher.

I am more and more surprised about my own praxis, I have never had so many strategies to apply in my classroom. Now we are completing another module in the program and I have the conviction that the trend is to improve, it will depend of my efforts, of my capacity to act as a professional of quality. I will never forget that the future of my kids is in my hands. Student-Teacher 1

The continuous work to foster collaboration and information sharing were important factors for the completion of the program. The work posted by teachers is first read and evaluated by the mediator, who also makes the text available to all online participants, allowing for increased peer-to-peer communication and sharing. Teachers then apply what they have learned with their kids in the classroom. As one student-teacher mentioned, the teaching strategies learned in the PEDEaD Program were tested in the classroom:

Through the texts we read, the group discussions, the research we do, I have developed new knowledge and have also developed new research interests which related to my daily practices in the classroom. When I learned something new I would then apply that knowledge in my classroom and watch how the kids would react. There are very interesting teaching strategies presented in the textbooks and we have applied some in our own classes. Student-teacher 5

The background scenario for this network is literacy in its broadest sense. Therefore we want to support the development of a teacher that can learn how to learn and to have the initiative and will to constantly improve his/her own practice, feeling comfortable to express him/herself with the written word. And at the same time this teacher will be able to make use of Web resources, beyond the written word, with images, sound and other multimedia resources to improve teaching. And another teacher stated the ways he improved teachings of mathematics:

“When I reflect about my work I can see that I have improved my way of teaching mathematics. Now I can contribute much more with the learning of my children and I help them to consider the various ways to come up with a solution to a problem. The math games we learned with our instructor are very interesting and the kids of my class loved to do them in the classroom and learned much more this way.” Teacher12

VII. CONCLUSIONS

The PEDEaD Program is a successful program of teacher professional development combining two modes, online and face-to-face work. In this context learning communities were essential for the success of the PEDEaD teacher professional development program. As observed in their face-to-face meetings and as expressed in their Reflective Diaries, the local (face-to-face) and national (online) communities of the PEDEaD program were significant factors for the success of the program as mentioned by project participants.

In distant locations participants can access their peers in the state capital, Rio Branco, or the General Coordination in Brasilia. They could also reach many of their peers online real time using the chat tool.

The collaborative pedagogical models built in the program were the result of teachers' practices that were shared and proposed for implementation. In this way teachers had a constant approach to dealing with the relation theory-practice as mentioned many of the them. As a result of this experiment we can suggest that collaborative models such as the ones used here and others, may improve the quality of the program while increasing student motivation and participation.

VIII. ABOUT THE AUTHORS

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